

CLAIMS

1. A process for the production of niobium and/or tantalum powder with large surface area, characterized by comprising the steps of reduction of the oxidized powder (powder of adequate size, 5 consisting basically in metallic niobium and/or tantalum and/or hydrides thereof, of high purity, previously oxidized in a controlled manner) with alkali or earth alkali metals and/or metal hydrides in a bath of molten salt, or within a solution of molten salts, subsequently followed by leaching, filtration, rinsing and drying the product thus obtained.

10 2. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the reducing step comprises as reactive elements calcium and magnesium or another alkali metal or earth alkali metal and/or metal hydride capable of reducing the niobium and/or tantalum oxide or the 15 oxidized compounds thereof.

20 3. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the bath comprises a molten salt or a mixture of molten salts comprised by chlorides or fluorides of alkali metals or earth alkali metals.

4. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 3, characterized in that the chlorides or fluorides of alkali metals or earth alkali metals comprise CaCl₂, NaCl, MgCl₂, KCl, CaF₂.

25 5. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the reducing step comprises a salt bath at temperatures

between 300° C and 1200° C.

6. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the reduction of the oxidized metal is carried out in a
5 salt bath under mechanical stirring or under stirring by an inert or reactive gas containing nitrogen.

7. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the oxidized powder is fed in a continuous and
10 controlled manner to the bath of salts containing the reducing agent.

8. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the mixture of the oxidized powder and the reducing agent in the salt bath is carried out prior to the melting step.

15 9. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the reduction in molten salt is carried out in a controlled atmosphere with partial pressures of nitrogen that may vary between 0.0005 atm (0.506625 mbar) and 1 atm (1013.25 mbar) or by
20 means of injection of N₂ gas or a mixture of inert gas and N₂ (containing from 0.1 to 50% N₂) in the molten salt, and by addition of nitrogen compounds to the salt bath in order that there may be obtained powders of niobium and/or tantalum with nitrogen contents varying from 100 to 70,000 ppm.

25 10. A process for the production of niobium and/or tantalum powder with large surface area, according to Claim 1, characterized in that the step of recovery of the niobium and/or tantalum

powder is conducted by means of the procedures of solubilization of the salt in water and leaching of the solid product obtained by using an acidic aqueous solution containing HCl and HF.